

### ABSTRACT OF THE DISCLOSURE

A baseband signal converter device for an impulse radio receiver combines multiple converter circuits and an RF amplifier in a single integrated circuit package. Each converter circuit includes an integrator circuit that integrates a portion of each  
5 RF pulse during a sampling period triggered by a timing pulse generator. The integrator capacitor is isolated by a pair of Schottky diodes connected to a pair of load resistors. A current equalizer circuit equalizes the current flowing through the load resistors when the integrator is not sampling. Current steering logic transfers load current between the diodes and a constant bias circuit depending on whether a  
10 sampling pulse is present.